

# **Stressors and Coping in the Norwegian Aeromedical Detachment in Afghanistan 2008-2010**

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## **ABSTRACT**

*Since spring 2008, The Norwegian Air Force has deployed a Bell 412 helicopter unit and the Norwegian Aero Medical Detachment (NAD) in the international operations in Afghanistan. The objective of this study was to improve our knowledge of incidents and burdens experienced by military personnel and their ability to cope with these stressors during service in Afghanistan. This study examines first, the frequency and intensity of experienced stressors and second, the coping abilities among the personnel serving in NAD Contingent II, III and IV in Afghanistan. We also compared potential differences in the stress burden between NAD and similar service in Bosnia and Kosovo. A survey of critical incidents involving our units may provide important knowledge for military training and education. One last important objective was to identify which coping strategies that was most prominent in this environment.*

## **INTRODUCTION**

### **Situational and contextual stressors of modern war**

In modern war theatres combat-related risk and exposure to extreme stress are to a great degree experienced as potential threats to all personnel in mission, regardless of their occupational training or operational duties (Mastroianni et.al 2008). Noncombative soldiers are now more likely to observe violence, death and wounded personnel. Today the conditions during modern military operations are

Report Documentation Page				Form Approved OMB No. 0704-0188	
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1. REPORT DATE <b>APR 2011</b>		2. REPORT TYPE <b>N/A</b>		3. DATES COVERED <b>-</b>	
4. TITLE AND SUBTITLE <b>Stressors and Coping in the Norwegian Aeromedical Detachment in Afghanistan 2008-2010</b>				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) <b>Luftkrigsskolen Trondheim Mil PB 4133 7450 Trondheim</b>				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT <b>Approved for public release, distribution unlimited</b>					
13. SUPPLEMENTARY NOTES <b>See also ADA578905. Mental Health and Well-Being across the Military Spectrum (Bien-être et santé mentale dans le milieu militaire). RTO-MP-HFM-205</b>					
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15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT <b>SAR</b>	18. NUMBER OF PAGES <b>18</b>	19a. NAME OF RESPONSIBLE PERSON
a. REPORT <b>unclassified</b>	b. ABSTRACT <b>unclassified</b>	c. THIS PAGE <b>unclassified</b>			

characterized by unpredictability, movement restrictions and Rules of engagement (ROE's), role ambiguity, isolation from family and known culture, increased workload and deployments (Bartone 2006). The enemy is often invisible, hiding among civilians. There is no clear "front line" and soldiers need to cope flexibly with the shifting challenges from day to day (Krulak 1999). The participants are at the mercy of the environment they enter. The setting is given and there are very few opportunities to influence change in the situation or development in the conflict. Any service member heading outside camp both in Iraq and Afghanistan has constantly been vulnerable to insurgent attacks such as roadside bombs and kidnapping (Mastroianni et al. 2008).

### **Stressors in the Norwegian Aeromedical Detachment.**

For the Norwegian Aeromedical Detachment (NAD), the main task was to operate a medical evacuation helicopter unit for the international coalition in the area of Gormach in Afghanistan. The unit was noncombative. A typical mission of medical evacuation could be an emergency combat situation, involving one's own coalition forces, intervention in order to get some wounded out of the area or pick up wounded civilian Afghans. Those who flew with the ambulance helicopters were at great risk of being exposed to war-related impressions such as gunfire and damaged infrastructure. Because of ROEs, those who had their tasks on the ground were initially excluded from moving outside the camp area. They were bound to their functions in camp and the period of service could vary from 4 weeks up to 6 months. Among this group, which represents more than half of the unit, one could expect boredom to become a challenge. On the other hand, those who remained in the camp were active contributors when the ambulance helicopter unit returned to camp with injured patients. Tasks such as stretcher bearer, or taking care of wounded or dead could make a strong impression when you were otherwise kept away from the war's expression. In previous studies of Norwegian military personnel in Kosovo, it was found that equipment failure was a key stressor (Kobbeltvedt, Brun, & Laberg, 2004). Before NAD was initiated, equipment failure was an important factor especially for the helicopter personnel (Interview 2010). Basically, the helicopters were not equipped for the climate that awaited them in Afghanistan.

### **Growth in military performance or stress-related problems after modern war experiences.**

Deployment in modern war scenarios involves exposure to multiple sources of chronic, acute and potentially traumatic stress. Such stress can affect not only short and long term health but also human performance. Stress-related psychological, social and behavioural problems are often difficult to detect until they become extreme. Events that cause trauma reactions in some individuals are more easily tolerated by others (Lukey & Tepe 2008).

Earlier studies of Norwegian and Swedish forces in international missions have documented both short term and long term stress reactions among participating military personnel (Andersson, 2001; Johansson 1997; Solberg, 1997; Fossum & Moldjord, 1999; Brettingen, 2007, Solberg 2007). However, research has also revealed that such operations may help increase personal skills and coping with challenges (Bartone & Kirkland, 1991; Bache, 1994; Johansson, 1997; Soeters & Rovers, 1997; Elklit, 1998; Voogelar, Muusse, & Rovers, 1998;). Similar experiences were also reported in studies from the Bosnia and Kosovo crises (Wallenius, Johansson, & Larsson, 1999; Widing et al, 2002). In the current study, self-reported military performance was used as an outcome measure. How did the NAD personnel perceive their military performance in Afghanistan? Was there a relationship between the critical incidents and military performance or between military performance and coping dispositions? Regarding the latter, intervening variables such as coping and support are often discussed as being a moderator or mediator in stress research (Baron & Kenny 1986; Lazarus 1999).

### **Intervening effects between stressors and military performance.**

The issue of moderation variables focuses on factors that influence the strength and/or direction of the relation between a predictor variable and the dependent variable (Muller, Judd & Yzerbyt 2005, Britt et al. 2004). In this study the stressor would be the predictor and military performance would be the dependent variable. A *moderator* is defined to affect the causal relationship between the two variables, but it is desirable not to correlate with either the predictor or the dependent variable (Baron & Kenny, 1986). Moderation means that the effect of a variable on an outcome is altered (i.e., moderated) by another variable. A *mediator variable* intervenes in the relationship between two other variables, correlates with the predictor and has an effect on the criterion. Meditational analyses attempt to identify the intermediary process that leads from the independent variable to the dependent variable (Muller, Judd & Yzerbyt 2005). Were there any signs of moderator or mediator effects between stressor exposure and outcome among the NAD personnel? According to Lazarus (1999), coping is a powerful mediator of the emotional outcome of a stressful encounter. Lazarus rejects coping as a moderator because the coping process is not a personality disposition but rather arises from the transaction between the person and the environment.

### **Coping and Support after stressful events**

Previous studies on Norwegian military personnel in Kosovo and Bosnia found different coping strategies after stressful events which seem to have cognitive, behavioural and emotional aspects. Behavioural activities that get the mind away from the war such as physical exercise, reading books, having something that occupies you at all times were among the strategies used (Solberg 1997; Moldjord et al. 2002). Thoughts about their own security such as available shelters and that the camp area were guarded were like a calming cognitive appraisal. To have someone to talk to, confidentially, was a venue for emotional venting in the category of social support (Solberg 1997, Moldjord et al. 2002).

In coping with stressors of modern war it is important that soldiers and leaders develop and sustain positive expectations about their deployment and service (Solberg 2007). Appraising experiences in a positive light, even when expectations may not be met, is crucial in resisting the destructive effects of stress. According to Blascovich et al. (2000), what determines your coping is whether you see the incident as a challenge or a threat.

Personnel who have been exposed to extreme stress or trauma will often cope better emotionally if they believe their experience serves a higher purpose (Lukey & Tepe 2008). This is something we can recognize from military personnel serving in the Search and Rescue and medical units. Rescuing wounded soldiers out of the battlefield in a helicopter operation and saving lives in acute medical operations are meaningful experiences despite heavy risk and extreme scenes being part of it (Folland 2009, Interview of NAD personnel 2010). Thinking that negative and painful experiences also can be an opportunity for positive individual growth is a way to make meaning out of stressful and challenging experiences. (Lukey & Tepe 2008).

### **Social support as coping resources.**

When exposed to alarming incidents, stress is usually decreased when individuals find their emotions and behaviours to be understood and supported by others. Social support is a psychosocial stress-reducing factor that has been frequently addressed in the military psychology literature of the last 30 years (Lazarus & Folkman, 1984; Kobasa, S.C., Maddi, R.S., Puccetti, M.C. & Zola, M.A., 1985; Noy, 1991; Olf, M., Brosschot, J.F., Godaert, G., 1993; Blascovich et al. 1999; Bartone, 2006; Reevy 2007; Grossman 2008;). Social support refers to comradeship in units and groups, loyalty to the unit and unit morale (Milgram, N. A., Orensten, R. & Zafir, E 1989; Marlowe, 1986). High levels of social support tend to make groups

function well during times of crisis. Several studies have found that social support and comradeship are most salient to coping under stress (Kobasa, 1985; Lefcourt, 1984; Cobb, 1976; Glass, 1973). Some studies report group cohesion as the most important factor in reducing traumatic stress responses (Grinker & Spiegel 1945; Glass, 1973; Milgram, 1989; Grossman 2008). Emotional support, information, comradeship and a feeling of control make individuals assess a stressful situation more adequately (Milgram et al., 1989). Britt (2004) reported unit cohesion to be a moderator or buffer of the stressor – strain relationship.

## **Research Questions**

The objective of this study was to investigate to what degree a number of stressors which were experienced among Norwegian forces in Bosnia and Kosovo, also were experienced in Afghanistan. The stressors were evaluated while a medical evacuation helicopter unit was deployed in Afghanistan, and the personnel were assessing how well they were able to cope with these stressors. We compared the intensity of the stressors in Afghanistan with Bosnia and Kosovo. Moreover, we wanted to identify the most prominent coping and support strategies, and see if these strategies moderated or mediated subjective military skills.

## **METHOD**

### **Participants**

The Norwegian Aeromedical Detachment (NAD) helicopter unit consisted of 43 service personnel. The operational department consisted of 13 persons (aircrew personnel) operating 3 Bell 412 helicopters. One ambulance helicopter crew consisted of one pilot and one navigator operating the helicopter and two medics in the cabin. In the escort helicopter there were the pilot and the navigator and two machine gunners in the cabin. The helicopter units always operated with the ambulance and the escort helicopters together. The third helicopter was a reserve but participated with the other two in emergency situations. Among the ground staff we found the detachment commander and his staff, intelligence personnel, mission support personnel, maintenance personnel, fire department and air medic (AME). Overall, this amounted to 30 people in ground support functions. The Bell 412 helicopter environment in the Norwegian Air Force consists of two helicopter squadrons, 720 Sqd and 339 Sqd. These two squadrons form the basis for recruiting flight crew members and maintenance personnel for NAD. Medical and support personnel were recruited primarily from the Air Force with supplements from other military units and the Norwegian health care system.

Since the detachment began in April 2008 and until October 2010, a total of 245 persons had completed service in NAD (LOI, 2011). NAD was organized in contingents serving for 6 and 12 months each. Until October 2010, four contingents were deployed. Several persons have deployed two to three times during this period. Work periods lasted from 4 weeks to 6 months for various NAD- functions. Because different categories of personnel rotated at different times, it was not possible to get an exact overview of whom and how many have had multiple deployments. For that reason the exact response rate was difficult to calculate. Since October 2008, 177 NAD personnel have responded to Questionnaire 1 and 109 responded to Questionnaire 2. This survey collected data primarily from the Contingents II (n = 71) and IV (n = 127) as well as some data from Contingent III (n = 86). The different N's are shown in the results section of this article.

### Measuring instruments

The study consisted of two questionnaires. Questionnaire 1 comprised demographic variables, measures of Expected Risk, Safety, Military skills expectancies and instruments measuring Hardiness and General Health. Questionnaire 2 comprised assessment of Critical Incidents/Stressors, Coping and Support abilities, Perceived Military skills, Hardiness and Subjective Health.

### Procedure

The survey was approved by the Regional Ethics Committee and the Head of the Norwegian Air Force. For Contingent II (Oct 2008-May 2009) Dataset 1 was collected, in Norway, during the departure to Afghanistan or immediately after arrival. Dataset 2 was collected in Afghanistan just before returning home to Norway. Two of the contributors to the survey conducted their service in NAD II and were responsible for collecting the data for Contingent II. Data was also collected from a minor group of participants in Contingent III, just before returning home to Norway. Only Dataset 2 was collected for this group. For Contingent IV (Oct 2009-Oct 2010) Dataset 1 was collected, in Norway, during the training period, about 4-6 weeks prior to deployment. Dataset 2 was sent to the home address right after returning to Norway. Each participant was given a letter of information about the general purpose of the study and completed the questionnaire on an individual basis. Participation was based on voluntariness and consent. The questionnaire was handed out to each participant in an addressed envelope. Data was read manually and transferred to SPSS (version 17) for statistical analyses.

### Measurements used in the current study.

*Critical incidents/Stressors Scale.* The Critical Incidents during Mission Questionnaire (CIM, Solberg 2007, 1997, Fossum & Moldjord 1999; Moldjord et al. 2003, 2002; Kobbeltvedt 2004; Laberg et al. 2002) aimed at measuring the frequency of stressful and dangerous situations during a mission. The questionnaire consisted of 28 items rated on a Likert scale from 0 (never) to 7 (continuously). Previous studies, using CIM, have revealed high values of internal consistency, with alpha values  $>.70$  (Solberg et al., 2006; 1997, Fossum & Moldjord, 1999., Kobbeltvedt, Laberg & Brun 2004). In the current study the final Cronbach alpha coefficient was .89. For the purpose of this study we reported the percentage of participants who experienced each type of stressor and used a sum score as an indicator of the total frequency of critical incidents during deployment.

*Coping & Support After Stressful Events Scale* (Solberg 2007; Fossum & Moldjord, 1999; Moldjord et al. 2003, 2002). This questionnaire was developed on the basis of interviews with personnel serving as UN observers and personnel serving in the helicopter-wing, NORAIR, in Bosnia from 1992-1995. The questionnaire originally consisted of 27 items, but was reduced to 24 items after performing an exploratory factor analysis. The questionnaire, using a Likert scale from 1 to 7, consisted of items such as "For me, talking to colleagues in the unit about the incident..." and "For me, to know that the camp area was guarded...", "For me, to engage in physical exercise..." was answered on a scale from unimportant (1) to very important (7). The former study revealed satisfactory internal consistency with Cronbach's alpha values between .64 and .88 on the five factors extracted from the questionnaire (Fossum & Moldjord, 1999).

In the current study the questionnaire consisted of 22 items based on the questionnaire used in the NORAIR study. Note that 6 of the original 24 items were taken out of the former questionnaire. 4 items were new; these items were constructed for the present study based on different conditions in Afghanistan compared to Bosnia. Examples of the new items are "Do something useful for the civilian population" and "To know that statistically there was little chance of being injured". In this study the final Cronbach alpha



coefficient was .92. Five items would give higher Cronbach alpha if the item was deleted. These five items were taken out of the scale before the final factor analyses. (Four of the same items loaded negatively on Inter – Item correlation matrix. Three of the same items had Item Total correlation lower than .3. (“have access to smoke or snuff”, “leave the camp area”, “be all alone”, “seek out the civilian population” and “think about other things”).

*Perceived Military Skills Scale* (Dependent variable). Individual evaluations of individual skills and abilities were measured using the 19-item self-evaluation questionnaire. Military Skills and Abilities, rated on a scale from 1 (very weak) to 5 (very good) and 6 (don’t know) (Solberg, 2007, 1997, Fossum & Moldjord, 1999). The questionnaire consisted of items such as: “*I perceive my ability to act even if I felt threatened was...*” and “*I perceive my ability to cooperate in difficult situation was...*”. Former studies have revealed satisfactory internal consistency, with Cronbach alpha above .7 (Solberg, 1997; Solberg et al., 2005; Solberg, 2007, Fossum & Moldjord, 1999). In the current study, Perceived Military Skills was used as a measure of the outcome of the service in NAD. Answer 6 (don’t know), was eliminated from the data. The Cronbach alpha coefficient was .88 (measured before mission, N=135) and .92 (measured after mission, N=107).

*Interview with NAD personnel.* Since April 2010, four interviews have been conducted with personnel who have served in NAD. In the current study the interviews were used as a supplement to the description of the environment and conditions in NAD.

*Ranking.* To provide an overview of stressor load and coping and support abilities rankings based on percentage rate and mean values among personnel in NAD were created.

## **Statistical Analyses**

*Reliability Analyses* (Chronbach Alpha) were used to measure internal consistency in all scales used in the study. *Frequency distribution* was used to determine the percentage ranking and the most common stressors and coping strategies. *Principal Component Analysis* was used to identify factor loadings that could extract qualified components of the *Critical Incident/Stressors Scale*. The *Independent-Samples t-test* was conducted to compare the stressor scores for different groups of NAD personnel. The *Pearson Correlation Coefficient* was used to investigate the relationship between *Stressors Scale* and *Coping & Support After Stressful Events Scale* and between *Military Skills Scale* and *Coping & Support*.

## **RESULTS**

A frequency distribution with percentage scores and mean values were conducted to show the items that scored highest on the *Critical Incident/Stressors Scale*. Table 1 shows the mean score on each incident/stressor item and the frequency of the number who experienced each incident/stressor.

“*To be called out at night without warning*” had the highest frequency among all stressors (75.2%)”. The second most frequent stressor in NAD was “*to experience the service as boring*”. Note that this item is not included in the factor analysis shown in Table 2. The item loaded equally on several components and was taken out of the analysis.

Figure 1 shows the stressor burden among different groups of Norwegian military personnel in Bosnia, KFOR in Kosovo and NAD, Afghanistan. UN observers in Bosnia experienced by far the highest stressor burden of these groups. Those who had their main tasks in the camp had a lower stressor load. The basis of this comparison is the Critical Incident/Stressor Scale which has been used as a measure of stressor burden for all these groups (Solberg 1997, 2007; Kobbeltvedt et al. 2004; Laberg et al. 2002; Fossum & Moldjord 1999; Moldjord et al. 2002).

**Table 1: Frequencies and Mean values of Critical Incidents/Stressors in NAD, Afghanistan.**

How often ...	Mean	Frequency
01. were you called out at night without warning	2.10	75.2%
02. did you experience the service as boring	2.49	73.4%
03. were you outside the camp area	2.82	69.7%
04. did you see seriously wounded or killed persons	2.40	68.8%
05. did you have technical problems during operations	1.49	60.6%
06. were you patrolling during night or in bad weather conditions	2.11	56.0%
07. did you see damaged buildings and infrastructure	1.89	54.1%
08. did you find yourself in situation unable to contact your family	1.06	48.6%
09. did you experience failure of intelligence information	1.17	45.0%
10. did you experience being without radio contact during operations	1.56	42.2%
11. did you enter or fly into conflict areas with ongoing actions of war	1.31	40.4%
12. were you worried	0.89	39.4%
13. did you see people starving or in need	0.99	34.9%
14. did you see dead bodies	0.88	29.4%
15. did you have to break ROEs, normally used at home, to fulfill your tasks	0.87	29.4%
16. did you experience that your equipment did not meet operational demands	0.95	26.1%
17. did you experience your vehicle/fly being exposed to fire or shrapnel	0.20	23.8%
18. did you experience your vehicle/fly having to manoeuvre away from threats	0.33	16.5%
19. did you stumble close to combat	0.26	15.8%
20. did you see colleagues being shot at	0.28	12.8%
21. were you being shot at	0.20	11.9%
22. were you forced to take cover because of war actions	0.22	11.0%
23. were you in life-threatening danger	0.15	8.3%
24. did you get injured	0.07	7.3%
25. were you threatened by mines	0.16	7.3%
26. were you seriously threatened with weapons	0.07	4.6%
27. were you seriously threatened by the civilian population	0.02	0.9%

N = 109

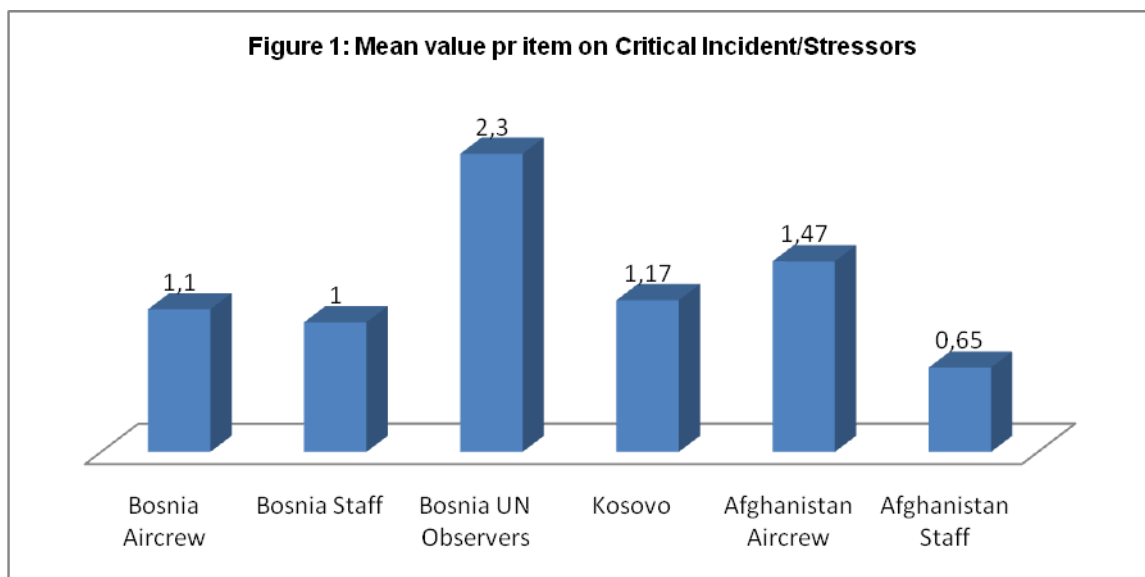
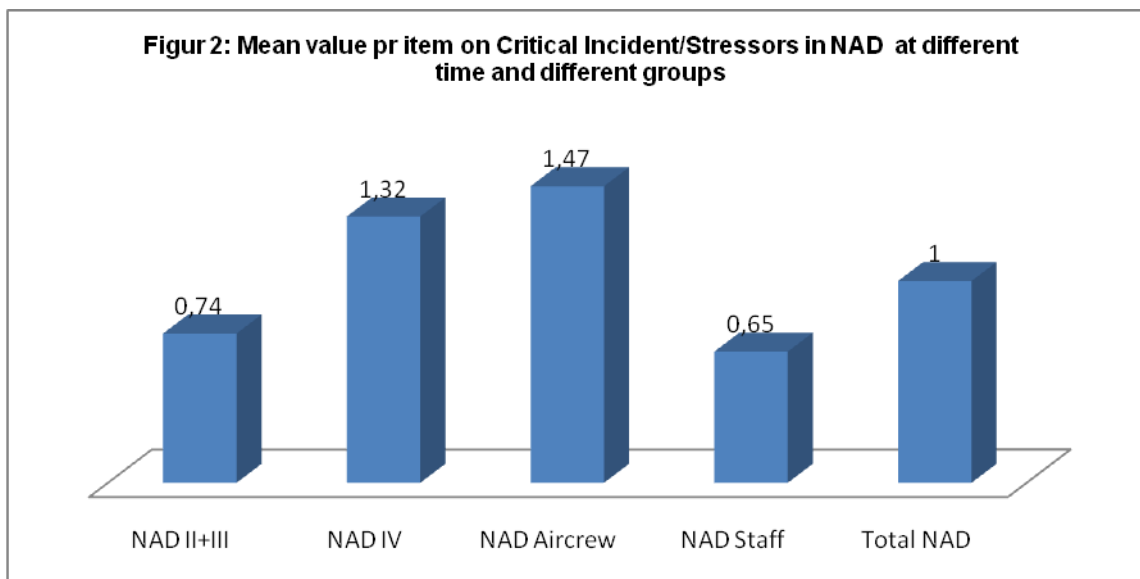




Figure 2 shows the total burden in NAD reflected through the difference between NAD II/III and NAD IV and the two main groups Aircrew personnel and Military Service/Staff personnel. The result showed that there were differences in stressor burden between functions and that the stressor load had increased during the period Oct 2008 to Oct 2010.



An Independent-Samples t-test was conducted to compare the stressor total scores for Aircrew and Military Service/Staff personnel and scores for NAD II+III (Oct 2008 – Oct 2009) against NAD IV (Oct 2009 – Oct 2010). Using equal variances, not assumed statistics, there was a statistically significant difference in scores for Gr 1 Aircrew personnel ( $M=39.62$ ,  $SD=21.92$ ) and Gr 2 Military Service/Staff personnel ( $M=17.47$ ,  $SD=13.10$ );  $t = (73.93) = 6.14$ ,  $p = .000$  (two tailed). The magnitude of the differences in the means (mean difference = 22.15, 95% confidence interval: 14.96 to 29.34) was large (Eta squared = 0.40). Using equally variances, not assumed statistics, there was a statistically significant difference in scores for NAD II+III ( $M=19.88$ ,  $SD=16.21$ ) and NAD IV ( $M=35.63$ ,  $SD=21.91$ );  $t = (91.19) = -4.22$ ,  $p = .009$  (two tailed).

**Table 2: Differences in stressor exposure between NAD II/III and NAD IV, Aircrew personnel and Service/Staff personnel.**

Total amount of Critical Incident/Stressors in NAD mission at different time and in different groups						
	N	Mean	SD	t	df	P (two tailed)
Tot Stressor score	109	27.5	20.58			
NAD II+III (Oct 2008-Oct 2009)	58	19.88	16.21	- 4.22	91.19	.000***
NAD IV (Oct 2009-Oct 2010)	51	35.63	21.91			
Aircrew personnel	48	39.62	21.92	6.14	73.93	.000***
Military Service/Staff personnel	57	17.47	13.10			

Note:\*\*\*  $p < .001$

The magnitude of the differences in the means (mean difference = 15.75, 95% confidence interval: - 23.17 to - 8.33) was large (Eta squared = 0.88). The overall mean for NAD personnel on the total stressor score was ( $M= 27.5$ ,  $SD = 20.58$ ). This means that the stressor load increased from NAD II+II to NAD IV. The results are shown in Table 2.

Next, we investigated the existence of underlying patterns of the stressors. A final Principal components analysis, with oblique rotation, was conducted on 23 items of “Critical incidents/Stressors” Scale. Prior to

performing PCA, the assumption of data for factor analysis was assessed. It revealed the presence of four components with eigenvalues exceeding Kaiser's criterion of 1, explaining 61.8% of the total variance and 36.6%, 10.7%, 8.2% and 6.3% of the variance respectively. Table 3 shows the factor loadings after rotation. The items that cluster on the same components represent C1: Risk of Equipment Failure, C2: War-related Threat, C3: Harmful Exposure, and C4: Direct Threat to Life.

**Table 3: Component loadings for Exploratory Factor analysis With Oblim Rotation of "Critical Incidents/Stressors" scale.**

Item	Pattern coefficients			
	Comp 1	Comp 2	Comp 3	Comp 4
How often did you....				
<b>Component 1: Risk of Equipment Failure</b>				
See people starving or in need	<b>.54</b>	-.04	.25	.32
Have to break ROEs, normally used at home, to fulfill your tasks	<b>.66</b>	-.03	.13	.21
Experience that your equipment did not meet operational demands	<b>.64</b>	.10	.16	.17
Stumble close to combat	<b>.42</b>	.34	.31	-.03
Have technical problems during operations	<b>.69</b>	-.01	-.23	.19
Experience being without radio contact during operations	<b>.50</b>	.46	.17	.03
Find yourself in situation unable to contact your family	<b>.47</b>	.02	.39	-.06
Were you worried	<b>.51</b>	.37	.20	-.10
<b>Component 2: War-related Threat</b>				
Patrolling during night or in bad weather conditions	.02	<b>.90</b>	-.13	-.14
Enter or fly into conflict areas with ongoing actions of war	.15	<b>.75</b>	.13	.12
Experience your vehicle/fly being exposed to fire or shrapnel	-.43	<b>.73</b>	.12	.23
Experience your vehicle/fly having to manoeuvre away from threats	.20	<b>.50</b>	.34	-.11
See damaged buildings and infrastructure	.35	<b>.46</b>	.17	.03
Were you outside the camp area	.06	<b>.80</b>	-.17	.10
<b>Component 3: Harmful Exposure</b>				
Were you called out at night without warning	.04	-.23	<b>.81</b>	-.09
See dead bodies	-.02	.07	<b>.76</b>	.21
See seriously wounded or killed persons	-.02	.11	<b>.73</b>	.10
<b>Component 4: Direct Threat to Life</b>				
Were you forced to take cover because of war actions	.13	-.09	.11	<b>.78</b>
Were you being shot at	-.29	.47	.16	<b>.63</b>
Were you seriously threatened with weapons	-.04	.01	.17	<b>.78</b>
Were you threatened by mines	.23	-.03	-.14	<b>.47</b>
Were you in life threatening danger	.05	.02	.07	<b>.70</b>
See colleagues being shot at	.31	.19	.32	<b>.38</b>
<b>Eigenvalues</b>	<b>8.43</b>	<b>2.46</b>	<b>1.88</b>	<b>1.44</b>
<b>% of variance*</b>	<b>36.63</b>	<b>10.70</b>	<b>8.18</b>	<b>6.27</b>
<b>Alpha</b>	<b>.85</b>	<b>.81</b>	<b>.81</b>	<b>.74</b>

Note. Factor loadings belonging to each component are in boldface. \*Total variance explained = 61.8%

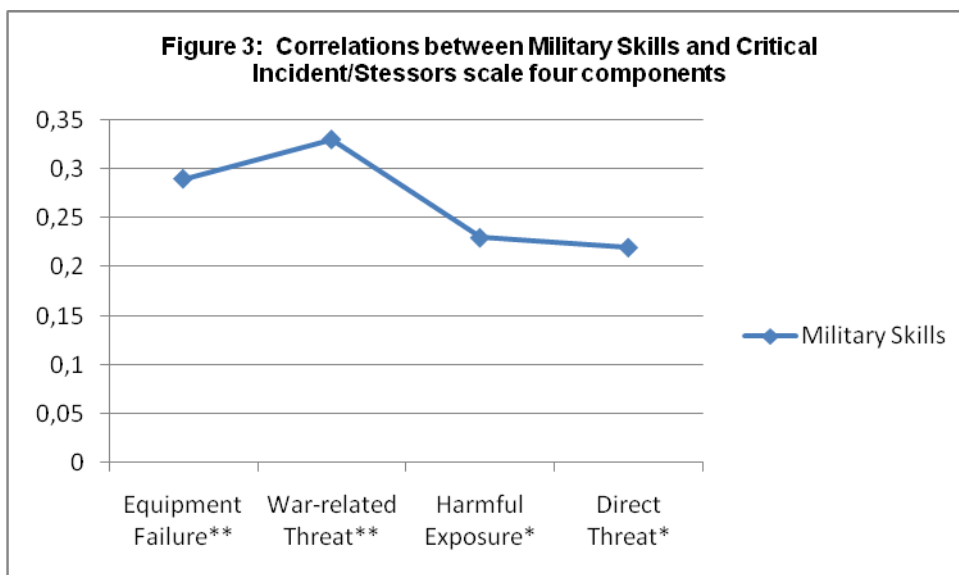
**Table 4: Extent of experienced Stressors among Aircrew and Military Service/Staff personnel**

Stressors 4 Components	n	Air crew personnel			n	Military Service/Staff personnel		
		M	SD	% of Total		M	SD	% of Total
S1. Risk of Equipment Failure	48	1.45	1.17	64.8	57	0.67	0.81	35.2
S2. War-related Threat	48	2.53	1.01	80.5	57	0.52	0.69	19.5
S3. Harmful Exposure	48	1.94	1.64	48.2	57	1.76	1.35	51.8
S4. Direct Threat to Life	48	0.30	0.51	75.0	57	0.08	0.39	25.0

Note. Total n = 105, M=mean, SD=Standard Deviation, % of Total= % of Total sum

An independent-samples t-test was conducted to compare the scores on the different stressor factors for Aircrew and Military Service/Staff personnel Table 4 shows that *War-related Threat* had the highest mean value among Aircrew personnel ( $M=2.53$ ,  $SD=1.01$ ). Among Military service/Staff personnel *Harmful Exposure* had the highest mean value ( $M=1.76$ ,  $SD=1.35$ ). Aircrew personnel had higher mean value on every component compared to Military Service/Staff personnel. Both groups scored very low on *Direct Threat to Life* ( $M=0.30/0.08$ ,  $SD=0.51/0.39$ ). On *Risk of Equipment Failure* there was a statistically significant difference in scores for Gr 1 Aircrew personnel ( $M=1.45$ ,  $SD=1.17$ ) and Gr 2 Military Service/Staff personnel ( $M=0.67$ ,  $SD=0.81$ );  $t(103) = 4.06$ ,  $p = .000$  (two tailed). The magnitude of the differences in the means (mean difference = 0.79, 95% confidence interval: 0.39 to 1.19) was quite large (eta squared = 0.40). On *War-related Threat* there was a statistically significant difference in scores for Gr 1 Aircrew personnel ( $M=2.53$ ,  $SD=1.01$ ) and Gr 2 Military Service/Staff personnel ( $M=0.52$ ,  $SD=0.69$ );  $t(80.69) = 1.17$ ,  $p = .000$  (two tailed). The magnitude of the differences in the means (mean difference = 2.01, 95% confidence interval: 1.67 to 2.35) was quite large (Eta squared = 0.13). On *Harmful Exposure* there was non significant difference in scores for Gr 1 Aircrew personnel ( $M=1.94$ ,  $SD=1.64$ ) and Gr 2 Military Service/Staff personnel ( $M=1.76$ ,  $SD=1.35$ );  $t(91.06) = 0.62$ , not sig. The magnitude of the differences in the means (mean difference = 0.18, 95% confidence interval: - 4.05 to 0.77) was small (Eta squared = 0.06). *Direct Threat to Life* there was a statistically significant difference in scores for Gr 1 Aircrew personnel ( $M=0.30$ ,  $SD= 0.51$ ) and Gr 2 Military Service/Staff personnel ( $M= 0.08$ ,  $SD=0.39$ );  $t(86.62) = 2.41$ ,  $p = .018$ . (two tailed). The magnitude of the differences in the means (mean difference = 0.22, 95% confidence interval: 0.04 to 0.40) was quite large (Eta squared = 0.25) (Cohen 1988).

Was there any relationship between Stressors and Perceived Military Skills? The relationship between *Perceived Military Skills* and *Stressors* four components was investigated using Pearson r correlation coefficient. Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity and homoscedasticity. There was strongest correlation between *War-Related Threats* and *Military Skills* ( $r=.33$ ,  $n=108$ ,  $p<.01$ ). Subsequent scores were *Equipment Failure* ( $r=.29$ ,  $n=108$ ,  $p<.01$ ), *Harmful Exposure* ( $r=.23$ ,  $n=108$ ,  $p<.05$ ), *Direct Threat to Life* ( $r=.22$ ,  $n=108$ ,  $p<.05$ ). Figure 3 shows an overview of correlation between *Military Skills* and *Stressors* four components.



Note: N=108, \*\*  $p<.01$ , \* $p<.05$

The correlation calculation investigating the relationship between Stressors and Military Skills was a precursor to a following regression model. The next move will be to look for differences in the Military Skills, before and after service, and see if the Stressors and/or Coping & Support variables explain any changes.

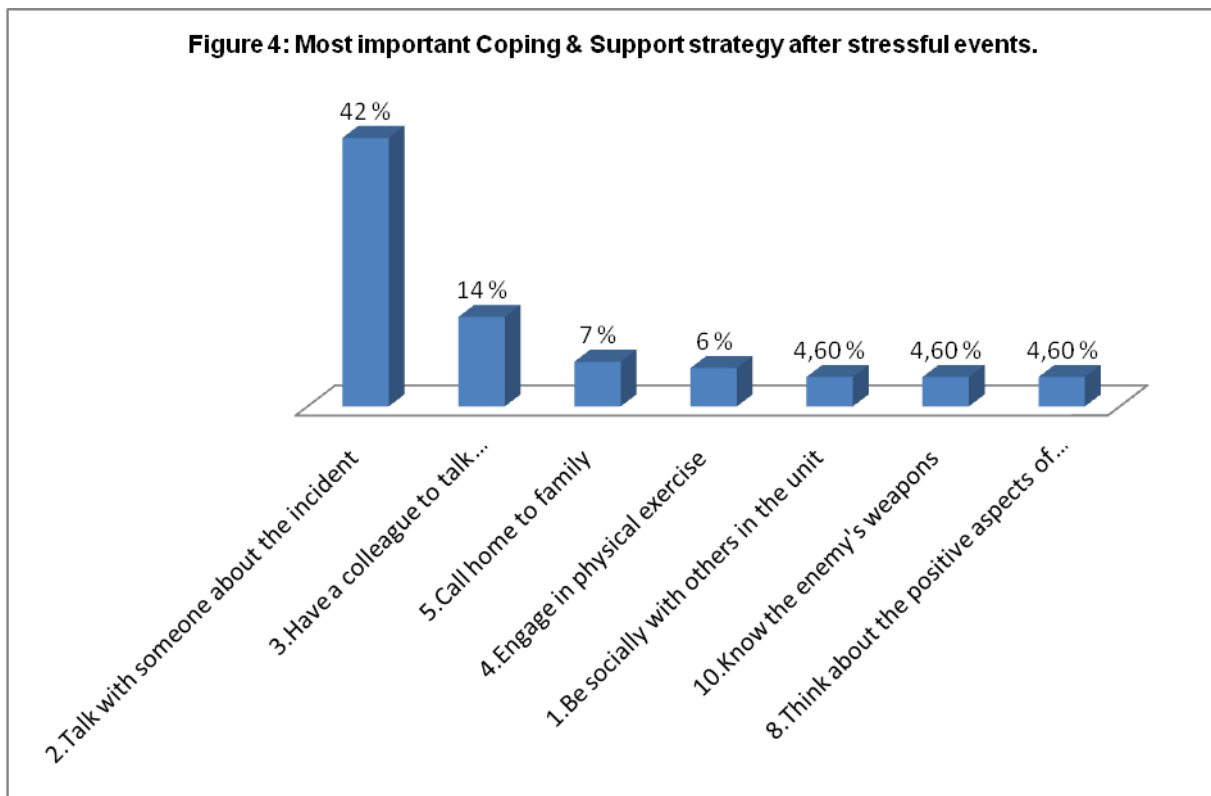
Signs of mediating or moderating effects of Coping & Support variables on Military Skills were examined. The relationship between, *Stressors* and *Coping & Support*, and *Military Skills* and *Coping & Support* was investigated using Pearson  $r$ . Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity and homoscedasticity. There was no significant relationship between *Stressors* and *Coping & Support* ( $r=.18$ ,  $n=101$ , not sig), There was a stronger relationship between *Military Skills* and *Coping & Support* ( $r=.41$ ,  $n=101$ ,  $p<.01$ ).

A frequency distribution using percentage scores and mean values was conducted to show which items that scored highest on the *Coping and Support After Stressful Event Scale*. Table 5 shows the mean score and the frequency of the number who experienced each Coping & Support item. We found that items which had the character of social contact and social support scored very high.. This result was reinforced by responses to the question: "*What was the most important thing for you after the most stressful events?*". Respondents were asked to pick, from the scale in order of priority, the most important items after stressful events. Figure 4 shows that, "*to have someone to talk to about the incident*" was picked as the most important by 42% of the respondents, and "*to have a colleague to talk to, confidentially*" was picked by 14 %. These two items were picked by more than the half of all respondents.

**Table 5: Mean value and Frequencies of Coping & Support after stressful events scale.**

For me to.....was: 1 = unimportant and 7 = very important.	Mean	Frequencies
1. be socially with others in the unit	5.26	74.2 %
2. talk to others about the incident	5.15	69.3 %
3. have a colleague to talk to, confidentially	5.13	69.2 %
4. engage in physical exercise	5.03	64.5 %
5. call home to family	4.87	63.3 %
6. be informed of the conflict development	4.81	65.4 %
7. know how close combat action took place	4.75	62.4 %
8. think about the positive aspects of mission	4.60	61.4 %
9. have access to our own medic	4.44	53.5 %
10. know the enemy's weapons	4.35	49.5 %
11. know that the camp area was guarded	4.28	54.5 %
12. know that it was statistically unlikely to get injured	4.24	49.5 %
13. think about other things	3.74	35.6 %
14. confidential chat with the commander	3.69	31.8 %
15. to have continuous work	3.61	28.7 %
16. do something useful for the civilian population	3.44	31.7 %
17. know that there were shelters in camp	3.40	34.6 %
18. think of what I could have done differently	3.34	24.8 %
19. to be alone	3.14	19.8 %
20. have access to cigarettes or snuff	2.19	16.8 %
21. leave the camp area	1.92	9.0 %
22. be in contact with the civilian population	1.61	9.0 %

Note: N=101. Frequencies are based on how many who answered 5, 6 or 7, on a 1-7 scale, where 1 = unimportant and 7 = very important.



Note: N=79, A total of 17 out of 27 items were picked as *most important* by at least one respondent. The 7 most frequently chosen items are represented in the figure.

In the analyses of the data we found, surprisingly, that social support seemed to predict the decrease in perceived military performance. A factor analysis of the Coping & Support after Stressful Events Scale showed that Social Support emerged as a separate factor. Further analyses will be performed to measure the extent to which social support explains changes in military performance.

## DISCUSSION

A comparison between results from the current study and previous studies of Norwegian military personnel in a modern war context showed some small differences in the total amount of stressor burden for NORAIR in Bosnia, KFOR in Kosovo and NAD in Afghanistan. Apparently NAD Aircrew had higher total stressor load than Aircrew in NORAIR, Bosnia. This was somewhat surprising, based on the existence of some very rough war stories from NORAIR helicopter missions in Bosnia (Fossum & Moldjord, 1999, Rua 2007). On the other hand, this study measured the average number of stressors and not the intensity of individual events. We also found a greater difference in stressor load between Aircrew personnel and Military Service/Staff personnel in NAD, Afghanistan than in NORAIR Bosnia. In Bosnia, ground personnel had more often missions outside the camp and were, in periods, more exposed to war-related impressions than in NAD. In this study, analysis which could reveal significant differences between the Bosnia, Kosovo and Afghanistan groups, was not conducted and, consequently, these comparisons were based on average values only.

The total stressor burden in NAD was relatively low compared with the UN Observers in Bosnia in the early 90s. UN observers were exposed to a constant pressure between the different parts in Bosnia, and they were often subjected to the risk of kidnapping and manipulative struggle for power between warlords

(Solberg 1999). The reason for the relatively low stressor load among staff personnel in NAD may be long periods with no hostile activity, in the nearby area, shifting to short intense periods of pressure and war-related stress. We also found a significant increase in stressor load from NAD II/III (Oct 2008 – Oct 2009) to NAD IV (Oct 2009-Oct 2010). This indicates that the hostile activity increased in this period.

Seventy-five percent of all respondents reported “*To be called out at night without warning*”. This was the most frequent single stressor- item in NAD. This means that 75.2 % of all respondents experienced this stressor at least once. In Kosovo this stressor had one of the highest frequencies. It rose from 59% to 97% by the end of service (Laberg et.al, 2002). The stressor describes a challenge many were exposed to which could include preparation or receipt of the helicopter ambulance unit in connection with nightly assignments, receiving injuries or warning alarms about possible grenade attacks. The second most frequent stressor was *to experience the service as boring*. Service in NAD could be idle for long periods and offer low excitement, especially for those who had their duties inside the camp. Because it was not allowed to move outside the camp area for staff personnel, the lack of freedom of movement, at times, became a burden. As a staff member reported: “*After a while, you could run around the camp area blindfolded, when doing exercise*”. Bartone (2006) reported boredom to be a primary psychological stress dimension in modern military operations.

Aircrew personnel in NAD were more exposed to critical incidents than Military Service/Staff personnel. This was expected because the helicopter unit often had tasks in combat zones and was at risk of fire from the ground. Four components of the Critical Incident/Stressor scale was extracted which gave a clearer picture of the different types of stressors. *Risk of Equipment Failure* indicates that the military equipment was not always to be trusted. This created a safety hazard at times. The aircrews were exposed to this stressor component more often than service/staff personnel. *War-related Threat* was the Stressor component with the highest average among the aircrew personnel. It refers to flying: in bad weather, into conflict areas and risk of being shot at. The stressor component which had the highest rate among Military Service/Staff personnel were *Harmful Exposure*. This component was built on the perceived impression nearly everyone was exposed to by the sight of injured and dead bodies. The last component, *Direct Threat to Life* consisted of stressors like being shot at and seriously threatened with weapons. This component had very low score in both groups which means that very few in NAD were directly exposed to life-threatening events. Stressors experienced in NAD’s mission in Afghanistan are much similar to previously reported stressors in peace operations (Fossum & Moldjord 1999, Adler et.al 2003; Bartone 2006). Even if very few of the incidents in NAD could be considered as potential traumatic stressors it is still possible that nontraumatic stressors could be exhausting over time. Many of those who participate in NAD, especially maintenance and aircrew members have to return to Afghanistan in later contingents. This strains family relations, creates uncertainty about future deployment conditions and the knowledge that one is exposed to a higher risk, when deployed, could be mentally exhausting (Moldjord et.al. 2007). There are tendencies to burnout among personnel in several departments of the Norwegian Air Force. Pilots are applying to Air Force Academy to get some rest from the operational environment, and maintenance personnel resign due to stress and work overload (Moldjord et al. 2007).

The result showed that all the four Stressor components correlated significantly with Military Skills. This indicates that there is some degree of coherence between Stressors and Military Skills. These correlations are not necessarily causal relations, but do require further investigations. Yet it was by experiencing stressors that the personnel were trying out their military skills. A connection is therefore natural. It has been previously reported that stressors from noncombative environments can affect performance and health (Britt et al. 2004). *War-related threat* proved significant, the highest correlation with Military Skills. This can be explained by the character of this stressor dimension. Experiencing *War-related threat* gives military personnel direct feedback on their proficiency in military skills.

There was no significant relationship between *Stressors* and *Coping & Support*. There was a relatively stronger relationship between *Military Skills* and *Coping & Support* ( $r=.41$ ) which was found to be



significant. Here, according to Baron and Kenny (1986), the assumptions of mediator and moderator effect in *Coping & Support* on *Military Skills* were broken.

Data indicates that Social Support predicts *Military Skills*. This is interesting and calls for further research on cohesion and social approaches as coping strategies. Examination of the frequency of all items in the *Coping & Support Scale* showed that strategies dealing with social contact and chat with others in the unit were of great importance after stressful events. Respondents were asked about what items they considered most important after stressful events. A total of 17 of 27 items were selected by at least one respondent. Seven items had a response rate above 4%. Two items stood out. Forty-two percent thought "talk with someone about the incident" was the most important coping strategy. Fourteen percent thought "to have a colleague to talk with, confidentially" was the most important. These results confirm that social contact and social support after stressful events are very important coping strategies (Lazarus & Folkman, 1984; Kobasa, 1985; Noy, 1991; Olff, 1992; Bartone, 1997; Blascovic & Mendes 1999; Reevy 2007; Grossman 2008). To facilitate this type of social contact after stressful events therefore appears to be an appropriate investment. (Bartone et al. 2002; Eid 2007; Fredriksen 2007; Holen 2007; Stueland 2007; Moldjord 2007; Folland 2009). Military personnel experiencing modern war scenarios, even if they are noncombative, seem to have a clear need to talk to someone after stressful experiences.

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